RESTATEMENTS AND AMENDMENTS

In the Claims:

The following is a list of claims currently pending in this application and their current status. This listing of claims replaces all prior versions and listings in this application.

1-47. (Cancelled)

48. (Examiner's amendment) A method for establishing transactions among trading partners in a network, comprising:

maintaining, utilizing a processor and memory, a registry of machine-readable specifications specifying business services offered by trading partners, the machine-readable specifications including at least one of definitions of, and references to definitions of, services offered and at least one of definitions of, and references to definitions of, documents to be exchanged with such services by trading partners; and

providing, in response to a request, one or more of the machine-readable specifications from said registry via a communication network to a requesting node;

wherein said machine-readable specifications are adapted to be parsed and include data that

identifies an input document,

identifies one or more transactions that accept said input document, and

describes sets of storage units and logical structures for the sets of storage units in said input document.

49-50. (Cancelled)

51. (Previously presented) The method of claim 48, wherein the definitions of the documents to be exchanged comprise respective descriptions of sets of storage units and logical structures for the sets of storage units.

52. (Previously presented) The method of claim 48, wherein the machine-readable specifications include documents compliant with a definition of a predefined document including logical structures for storing an identifier of a particular transaction, and at least one of definitions and references to definitions of input and output documents for the particular transaction.

53. (Examiner's amendment) The method of claim 48 ~~49~~, wherein the storage units comprise parsed data.

54. (Examiner's amendment) A method for establishing transactions among trading partners in a network, comprising:

    maintaining, utilizing a processor and memory, a registry of machine-readable specifications specifying business services offered by trading partners, the machine-readable specifications including at least one of definitions of, and references to definitions of, services offered and at least one of definitions of, and references to definitions of, documents to be exchanged with such services by trading partners, wherein said machine-readable specifications comprise data identifying respective descriptions of sets of storage units and logical structures for the sets of storage units; and

    providing, in response to a request, one or more of the machine-readable specifications from said registry via a communication network to a requesting node,

    wherein the sets of storage units comprise parsed data, and wherein the parsed data in at least one of the documents to be exchanged comprises:

        character data encoding text characters in the one of the input and output documents, and

        markup data identifying sets of storage units according to the logical structure of the one of the input and output documents.

55. (Previously presented) The method of claim 54, wherein at least one of the sets of storage units encodes a plurality of text characters providing a natural language word.

56. (Previously presented) The method of claim 54, wherein the specification includes

interpretation information for at least one of the sets of storage units identified by the logical structure of at least one of the input and output documents, encoding respective definitions for sets of parsed characters.

57. (Previously presented) The method of claim 53, wherein the storage units comprise unparsed data.

58. (Previously presented) The method of claim 48, including associating trading partners with said machine readable specifications.

59. (Examiner's amendment) An apparatus used for establishing transactions among trading partners in a network, comprising:

    a network interface;

    memory storing data and programs of instructions, including a registry of machine-readable specifications specifying business services offered by trading partners, the machine-readable specifications including at least one of definitions of, and references to definitions of, services offered and at least one of definitions of, and references to definitions of, documents to be exchanged with such services by trading partners; and

    a data processor coupled to the memory and the network interface which executes programs of instructions;

    <u>wherein said machine-readable specifications are adapted to be parsed and include data that</u>

        <u>identifies an input document,</u>

        <u>identifies one or more transactions that accept said input document, and</u>

        <u>describes sets of storage units and logical structures for the sets of storage units in said input document</u>;

    wherein the programs of instructions include logic to provide, in response to a request received at the network interface, one or more of the machine-readable specifications from said registry via a communication network to a

requesting node.

60-61. (Cancelled)

62. (Previously presented) The apparatus of claim 59, wherein the definitions of the documents to be exchanged comprise respective descriptions of sets of storage units and logical structures for the sets of storage units.

63. (Previously presented) The apparatus of claim 59, wherein the machine-readable specifications include documents compliant with a definition of a predefined document including logical structures for storing an identifier of a particular transaction, and at least one of definitions and references to definitions of input and output documents for the particular transaction.

64. (Cancelled)

65. (Previously presented) An apparatus used for establishing transactions among trading partners in a network, comprising:

a network interface;

memory storing data and programs of instructions, including a registry of machine-readable specifications specifying business services offered by trading partners, the machine-readable specifications including at least one of definitions of, and references to definitions of, services offered and at least one of definitions of, and references to definitions of, documents to be exchanged with such services by trading partners, wherein the definitions of the documents to be exchanged comprise respective descriptions of sets of storage units and logical structures for the sets of storage units; and

a data processor coupled to the memory and the network interface which executes programs of instructions; wherein the programs of instructions include

logic to provide, in response to a request received at the network interface, one or more of the machine-readable specifications from said registry via a communication network to a requesting node;

wherein the storage units comprise parsed data, and the parsed data in at least one of the documents to be exchanged comprises:

character data encoding text characters in the one of the input and output documents, and

markup data identifying sets of storage units according to the logical structure of the one of the input and output documents.

66. (Previously presented) The apparatus of claim 65, wherein at least one of the sets of storage units encodes a plurality of text characters providing a natural language word.

67. (Previously presented) The apparatus of claim 65, wherein the specification includes interpretation information for at least one of the sets of storage units identified by the logical structure of at least one of the input and output documents, encoding respective definitions for sets of parsed characters.

68. (Examiner's amendment) The apparatus of claim 65 ~~64~~, wherein the storage units comprise unparsed data.

69. (Previously presented) The apparatus of claim 59, wherein the programs of instructions include logic to associate identifiers of trading partners with said machine-readable specifications.

70. (Examiner's amendment) A method for executing transactions among nodes in a network, the network including a plurality of nodes which execute processes involved in the transactions, comprising:

publishing through a communication network a machine-readable specification of an interface to an operation, the specification including a definition of an input document and a definition of an output document, the definitions of the input and output documents comprising respective descriptions of sets of storage units and logical structures for the sets of storage units<u>;</u>

<u>wherein said machine-readable specifications are adapted to be parsed and include data that</u>

<u>identifies an input document,</u>

<u>identifies one or more transactions that accept said input document, and</u>

describes sets of storage units and logical structures for the sets of
storage units in said input document;

receiving data comprising [[an]] the input document through the
communication network;

parsing the data according to the specification to identify the input
document;

providing at least a portion of the input document in a machine-readable
format to a transaction process which produces an output;

forming an output document, based on the specification and according to
the definition of the output document; and

transmitting the output document through the communication network.

71-72. (Cancelled)

73. (Previously presented) The method of claim 70, wherein the definitions of the
documents to be exchanged comprise respective descriptions of sets of storage units
and logical structures for the sets of storage units.

74. (Previously presented) The method of claim 70, wherein the machine-readable
specifications include documents compliant with a definition of a predefined document
including logical structures for storing an identifier of a particular transaction, and at
least one of definitions and references to definitions of input and output documents for
the particular transaction.

75 – 83. (Cancelled)

84. (Previously presented) A method of executing operations requested by a consuming
service running on a consuming server via a network, comprising

exposing to at least one consuming service via a network an operation
interface running on a providing server, the operation interface providing access
to an operation running on a processing server and,

wherein the operation interface implements an interface definition stored
in an operation interface definition data structure on an interface storage means

and the interface definition data structure includes definitions of input and output business documents, and the definitions include respective descriptions of sets of storage units and logical structures for the sets of storage units;

receiving at the providing server via the network an input business document from the consuming server;

parsing at the providing server the input business document according to the definition of the input business document to provide access to its content and logical structure and translating at least part of the parsed input business document into an internal input data object;

sending from the providing server to the operation running on the processing server the internal input data object; and

transmitting via the network an output business document that conforms to the definition of the output business document to the consuming server.

85. (Previously presented) The method of claim 84, further including:

the providing server receiving back an internal output data object from the processing server; and

translating at the providing server the internal output data object into the output business document that is transmitted to the consuming server.

86. (Previously presented) The method of claim 84, wherein the input and output business documents conform to a standard Extensible Markup Language XML format.

87. (Previously presented) The method of claim 84, wherein the storage units comprise parsed data.

88. (Previously presented) The method of claim 87, wherein the parsed data in at least one of the input and output business documents comprises:

character data encoding text characters in the one of the input and output business documents; and

markup data identifying sets of storage units according to the logical structure of the one of the input and output documents.

89. (Previously presented) A method of causing operations to be executed responsive to a request from a consuming service running on a consuming server to an operation interface of a providing server via a network, wherein the operation interface implements an operation interface definition stored in an operation interface definition data structure on an interface storage means and the interface definition data structure includes definitions of input and output business documents, and the definitions include respective descriptions of sets of storage units and logical structures for the sets of storage units, the method comprising:

marshalling data on the consuming server from a first internal data object into an input business document that conforms to the operation interface definition of the input business document;

sending the input business document from the consuming server to the providing server via the network;

receiving from the providing server at the consuming server an output business document that conforms to the operation interface definition of the output business document;

parsing at the consuming server the output business document according to the definition of the output business document to provide access to its content and logical structure and translating at least part of the parsed output business document into a second internal data object.

90-91. (Cancelled)